PROFESSIONAL STATISTICIANS SOCIETY OF NIGERIA (PSSN) 1ˢᵗ VIRTUAL CONFERENCE

Monday 24ᵗʰ – Wednesday 26ᵗʰ August 2020

TABLE OF ABSTRACTS / SCHEDULE FOR PRESENTATIONS

Time	ITEM
	Day 1: Monday, 24 August, 2020
10.00 – 10.20	Meet and Greet on Zoom by Participants
10.20 – 11.00	Opening Speech and Keynote Address I by Professor Sulyman Age AbdulKareem *Vice-Chancellor, University of Ilorin, Nigeria*
11.00 – 12.00	**LEAD PAPER PRESENTATION I BY** **Professor Bayo H. Lawal** *Department of Statistics and Mathematical Sciences, Kwara State University, Malete*
12.00 – 12.10	Break-up into Parallel Sessions (Zoom Rooms)

Chairman	Group 1 Prof. W. B. Yahya	Group 2 Dr. S. O. Oyamakin	Group 3 Dr. M. K. Garba
12.10 – 15.00	**A1** A Sufficient Dimension Reduction Selection of Core Relevant Predictive Variables and Classification of University Students' Academic Class of Degrees *Olorede, K. O. and Babalola, M.*	**B1** ARIMA Model Selection for Count Data with Outliers *Akeyede, I., Saleh, I. M., Bello, A. J. and Abubakar, M. B.*	**C1** On the Quasi-Transmuted Mukherjee-Islam Distribution *Osowole, O. I., Izunobi, C. H. and Nwaka, R.*
	A2 Comparisons of some existing Exponential Cubic Rank Transmutation Distribution on bladder cancer data *Adetunji A. A. and Ademuyiwa J. A.*	**B2** Modelling the Effects of Uneven Thermal Conductivity on Soil Temperature using a Modified Navier-Stoke Equation *Olaleye, O. A. and Olalude, G. A.*	**C2** Efficiency of Beta- Binomial Distribution in Predicting Consumers' Buying Behavior *Rafiu, A. A. and Ogunjobi, E. O.*
	A3 Meta-Analysis on the Risk of Mortality in Patients with Ebola Virus Disease *Adehi M. U. and Ekele Alih*	**B3** On the Efficiency of Calibration Combined Ratio Estimators in Stratified Random Sampling *Muili, J. O., Singh, R. V. K. Audu, A. and Babayemi, A. W.*	**C3** On the Predictive Ability of Time Domain Modeling of Long Memory Data *Adeboye, N. O. and Ogunnusi, O. N.*
	A4 An Empirical Comparison of Sample t-test and Sign Test on One Sample Data with Outlier *Danjuma, H.*	**B4** Statistical Comparison of Web Search Engines using User-based Metrics in Survey Statistics *Ogunyinka, P. I., Aigbogun, L. I. and Sodipo, A. A.*	**C4** Robustness of GARCH Family Models High Positive Autocorrelation *Emenogu, N. G. and Adenomon. M. O.*
	A5 On Statistical Modeling the Effect of the Behavioural Change on the Transmission of Malaria for Enhancing Social and Health Security. *Omokaro B. and Nwanunu P.*	**B5** Influence of Buoyancy Force on Magneto-hydrodynamics Flow with Time Dependent Thermal Conductivity *Olalude, G. A., Olaleye, O. A. & Bamigboye, J. S.*	**C5** A New Three- Parameter Inverse Exponential Distribution: Properties and Applications *Mohammed, A. S. and Ugwuowo, F. I.*

		Suleiman, S., Beki, D. O., Elepo, T. A. and Yusuf, G. A.
A28 Modelling the Nigerian Stock Index Returns using the Generalised Autoregressive Score (GAS) Models *Momoh, B. and Okoh, A. V.*	**B28** Evaluation of Balanced Incomplete Block Design: Application of Group Theory *Akra, U. P., Akpan, S. S. and Ugbe, T. A.*	*Ojenike, O. T., Kafayat, A. A. and Abdulkadir, H. S.* **C28** Exponentiated Exponential Pareto Distribution *Jimoh, M. A. Aderoju, S. A. and Bukoye, A.*
A29 Stock Market Prices and Foreign Exchange Rate Interactions in Nigeria: Evidence from Cointegrated VAR Model *Kuhe, D. A. and Torruam, J. T.*	**B29** Industrial Development and Economic Growth in Nigeria: Issues and Challenges *Acha, C. K.*	**C29** Exponentiated Muth-X Family of Distributions: Properties and Estimation *Sirajo, M., Yahaya, A. and Doguwa, S. I.*
A30 Panel Analysis of Exchange rate, Inflation rate and Gross Domestic Product in some selected countries in Africa *Amalahu, C. C. and Nwabueze, J. C.*	**B30** Investigating the Birth Pattern of Women in Kebbi State with Some Exogenous Variables *Onwuka, G. I., Babayemi, W. A. and Yusuf, I.*	**C30** Factors affecting uptake of optimal doses of Tetanus Toxoid vaccine in six states of Nigeria *Isa, A. A., Hamza, M., Abubakar, A. S. and Rukayya, A. S.*
A31 Flexible Distribution for Modeling Life Time Data *Badmus, N. I., Olufolabo, O. O and Karokatose, G. B*	**B31** On Analysing Multiple Choice Questions in Nigeria Universities' Computer Based Tests with Item Response Theory Models *Adetutu, O. M. and Lawal, B. H.*	**C31** Human Capital Development as a panacea for Sustainable Economic Growth in Nigeria: A Pairwise Granger Causality and Bounds Test Approaches *Torruam, J. T.*
A32 Generalized Linear Mixed Effects Models Using Normal-Independent Distributions: Formulation and Application *Adeniyi, I. A. and Yahya, W. B.*	**B32** From Whether to When: A Study of Student Dropout in a Management School *Adeleke, I. A., Ajijola, L. A., Ojikutu, R.K. and Iyanda, S. F.*	**C32** Joint Spatial Mapping of Multiple Crimes Using a Multivariate Conditional Autoregressive (MCAR) model approach *Adeyemi, R. A., Obatomi, A. D. and Maiyaki, J.*
A33 Modelling and Estimation of Climatic Variable using Time Series Trigonometric Analysis *Olatayo, T. O., Taiwo, A. I. & Olakunle, K.*	**B33** Marginal Regression Models for Mixed Response Variables *Nweke, C. J. and Mbaeyi, G. C.*	**C33** Markovian Analysis on Mobile Phone Network Switching: A Survey of Mtn, Airtel, 9mobile And Glo Usage Among YABATECH Students *Nwajieze, C. O., Ikegwu, E. and Olufolabo, O.*
A34 Multiple Regression Analysis of Students' Performance Using Variable Selection Procedures *Oti, E. U., Slink, R. A., Enogwe, S. U. and Bekesuoyeibo, R.*	**B34** On the Application of Principal Component Analysis on Rainfall Data (A Case Study of Kano State) *Ibrahim, A. S. and Nazir, M. I.*	**C34** Modelling of the Spread of Lassa Fever in Nigeria *Oni, O. V., Oni, O. A and Folorunso A. G*
A35 Rank Bi Serial Correlation of yield for case findings through Strategic HIV Testing approaches by AHF Health Care Facilities in Kogi State, Nigeria *Moses Luke, Adah Patrick Eneojo, Adeoye Matthew, Folajimi Oluwasina, & Desmond Olawale*	**B35** A Study on the Average Rainfall in Some Selected Cities in Nigeria *Alao, N. A., Suleiman, S., Yusuf, B. T. and Kuranga, L. J.*	**C35** Linear Combination-Cum-Ratio Estimators in Stratified Random Sampling Using Non-Conventional Measures of Dispersion *Audu, A., Ishaq, O. O., Olayiwola, O. M., Usman, M. F., Abdulrasheed, A. and Olawoore, S. A.*

On Analysing Multiple Choice Questions in Nigeria Universities' Computer Based Tests with Item Response Theory Models

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Abstract

Every year, university teachers face challenge of how to cope with increasing number of examination students together with the validity of test items. Due to this, multiple choice questions (MCQ) test items came to address this problem but little or no attention is paid to the properties of test items. Absent of item analysis in developing these MCQ items could endanger the integrity of assessment, selection, certification, and placement. In the same way, improper use of item analysis and lopsided test items could lead to the same fate by bringing about wrong award of grade and certificate. A three-parameter logistic (3PL) model uses ability to predict the probability of a certain response as a function of student's ability level and item properties in describing suitability of the test items as well as nominal response (NR) model which estimates students' propensity to endorse their preferred options are presented as a solution module to the problem. The estimated discrimination, difficulty, pseudoguessing, category difficult, and category discrimination parameters indices of items are presented for illustrations and guide to test developers (e-Center, NECO, WAEC, and JAMB).

Keywords: *logistic, discrimination, difficulty, validity, test, pseudoguessing, students*

PROFESSIONAL STATISTICIANS SOCIETY OF NIGERIA (PSSN)

Certificate of Participation

This is to certify that

Mr. ADETUTU OLAYIWOLA MATTHEW

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PROFESSIONAL STATISTICIANS SOCIETY OF NIGERIA

Theme: "Statistics in National Security and Industry Revolution"

Date: 24th-27th August, 2020.

Venue: Virtual Conference

National President

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